MassDEP
Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs
Department of Environmental Protection
One Winter Street Boston, MA 02108 • 617-292-5500

Massachusetts 2012 Air Monitoring Network Plan

Response To Comments

9/6/12

MassDEP operates a network of 27 ambient air quality monitoring stations at locations across the state as part of a comprehensive program to provide information about air quality to the public and to determine compliance with National Ambient Air Quality Standards. Each year, MassDEP is required to submit to the U.S. Environmental Protection Agency (EPA) an Air Monitoring Network Plan in accordance with Title 40 CFR Part 58.10. On May 30, 2012, MassDEP published a draft 2012 Network Plan for a 30-day public comment period. MassDEP received comments from the U.S. Environmental Protection Agency Region 1 (EPA), the Buzzards Bay Coalition (BBC), the Sierra Club (SC), and the Law Office of Robert Ukeiley on behalf of the Sierra Club. MassDEP appreciates the comments received on the draft Network Plan and has summarized and responded to the comments below.

EPA's Comments:

1. Comment: EPA established a new 1-hour sulfur dioxide (SO2) National Ambient Air Quality Standard (NAAQS) at a level of 75 ppb, not 100 ppb as noted. MassDEP correctly indicates that existing SO2 monitors in Massachusetts meet EPA's requirement to site four SO2 monitors under EPAs Population Weighted Emissions Index criteria, and these monitors would be required going forward. EPA recently initiated a stakeholder process to refine the agency's approach for implementing the SO2 standard, which could result in a greater reliance on SO2 monitoring in some circumstances. EPA would like to initiate a dialogue in the near future regarding whether there are any areas in Massachusetts where additional SO2 monitoring may have merit.

Response: MassDEP has corrected the value of the SO2 NAAQS to 75 ppb. MassDEP looks forward to future discussions on SO2 monitoring as EPA refines its approach for implementing the SO2 standard.

2. Comment: The revised nitrogen dioxide (NO2) standard should be listed as 100 ppb, not 75 ppb. Massachusetts is obligated to site up to five near-road NO2 monitors. Rhode Island has indicated that it intends to meet the obligation for the multi-state MA/RI Providence area. As

correctly noted, EPA has put forward a funding strategy that would ensure the largest areas begin monitoring for NO2 near-road first, and as such, EPA has been working with MassDEP on siting a near-road NO2 monitor in the Boston area. In addition, EPA will site at least 40 NO2 monitors nationwide in susceptible and vulnerable communities. Working closely with MassDEP, EPA has identified the Boston-Harrison Avenue, Boston-Kenmore Square, and Springfield-Liberty Street NO2 monitors that will serve to meet this obligation. MassDEP also is obligated to operate monitors meeting the urban community-wide monitoring requirements, although the existing year-round NO2 monitors in Lynn and Newburyport may meet this requirement.

Response: MassDEP appreciates the assistance EPA has provided to a site a near-road monitor in the Boston area. MassDEP has identified a near-road site next that meets EPA's siting criteria on Von Hillern Street next to I-93 in Dorchester/South Boston and is in the process of preparing a Near-Road Monitoring Plan and placing a monitoring station at the location, with the goal of beginning monitoring in late 2012. MassDEP also will continue to operate the existing NO2 monitors at Boston-Harrison Avenue, Boston-Kenmore Square, Springfield-Liberty Street, Lynn, and Newburyport.

3. Comment: EPA notes and acknowledges MassDEP's "Summary of Network Changes."

Response: MassDEP appreciates EPA's comments and continuing partnership in air quality monitoring.

Buzzards Bay Coalition's Comments

4. Comment: Nitrogen from atmospheric deposition is a significant fraction of the nitrogen pollution to coastal waters in Southeastern Massachusetts. Having a robust record of air pollution is valuable not only for understanding exposure of residents but also for understanding the exposure of our estuaries. The Massachusetts Air Monitoring Network provides a vital service to the Commonwealth by documenting the presence and concentration of various pollutants at stations across the Commonwealth. For many of the air quality parameters measured, there is scant or no coverage of stations in Southeastern Massachusetts. The New Bedford metropolitan area is home to industry and one of the most significant fishing fleets in the nation. Understanding how the emissions from these sources influence air quality in the New Bedford area is important for the over 100,000 people that live and work in the area. In addition, as the site of some of the worst PCB contamination in the country, New Bedford Harbor has unique challenges with respect to air pollution. While the industrial contamination of the Harbor has stopped, at each low tide, PCB and lead-laden soils are exposed and some of the pollutants are volatilized. The only monitoring site in the New Bedford metropolitan area at Fairhaven only records ozone and meteorological parameters. The monitoring parameters for this area should be expanded to include those parameters that are likely important pollutants in this area (at a minimum: nitrogen oxides, lead, fine particles, PCBs). Quantifying air pollutants in the New Bedford area is important for providing information on their level of exposure to those living and working in the area and for scientists and managers working to reduce both air pollution and pollution of our estuaries and rivers.

Response: MassDEP believes that ozone monitoring in Fall River and Fairhaven (to be resumed in 2013) adequately characterizes ozone levels in the South Coast area, and therefore an additional monitor in New Bedford is not needed. MassDEP also monitors fine particles in Fall River (as well as sulfur dioxide), and given that fine particle levels are well below the standards in Fall River, as well as in more densely developed areas such as Boston, MassDEP believes that additional fine particle monitoring is not needed in New Bedford.

MassDEP does not monitor for nitrogen oxides in the Southeastern area of the state, but other NOx monitors in the Western, Central, and Eastern/Northeastern areas show levels well below the NOx standards. The relationship of ambient concentrations of NOx and SOx to aquatic and terrestrial deposition is an emerging area of research that may affect future monitoring efforts. EPA recently undertook a review of the secondary standards for NOx and SOx, and explored the possibility of developing a multi-pollutant standard to address deposition-related effects, including aquatic and terrestrial acidification and nutrient enrichment. In March 2012, EPA took final action to retain the current secondary standards for NOx and SOx, and decided not to add a new, multi-pollutant standard at the time but to study the impacts these pollutants have on sensitive ecosystems to aid in considering a multi-pollutant standard in the future.

MassDEP's statewide air monitoring network is designed primarily to measure pollutants for which EPA has established National Ambient Air Quality Standards (NAAQS), referred to as "criteria pollutants." EPA periodically reviews the standards and revises them as needed to ensure that they protect public health and public welfare, and also establishes criteria to ensure adequate monitoring networks for each criteria pollutant. EPA also establishes criteria for air toxics monitoring sites, one of which is in Boston (Harrison Avenue). PCBs are not a criteria or toxic pollutant that EPA has identified for monitoring, and MassDEP does not have the capacity to monitor PCBs as part of its statewide air monitoring network. Air monitoring of specific toxics that are related to a federal Superfund cleanup such as New Bedford Harbor would be more appropriately addressed in the EPA remediation plans for the site.

5. Comment: The Draft Plan notes that the monitoring site located in Fairhaven (Leroy Wood Elementary School) was discontinued in April 2012 due to the school reconstruction and that MassDEP hoped to have an alternate site in Fairhaven for the 2013 season. An alternate site in Fairhaven should be identified immediately. The Coalition also recommends that MassDEP consider locating an additional site in New Bedford, which has a larger population, more industry, and a legacy of massive industrial pollution.

Response: Working with the Town of Fairhaven, MassDEP has identified the Hastings Middle School as an alternative site for its ozone monitor in Fairhaven. MassDEP plans to install the monitoring station by Fall 2012 so that it will be ready to operate at the beginning of the next ozone monitoring season on March 1, 2013.

Sierra Club's Comments

6. Comment: Modeling, not monitoring, is a preferred approach for determining compliance with the 1-hour SO2 NAAQS. To the extent MassDEP chooses to base its SO2 NAAQS compliance determinations on monitored data, MassDEP must increase the number of monitors

in the vicinity of the largest SO2 sources in order to capture more accurately the highest ambient SO2 concentrations. The lone monitoring location in Fall River near Brayton Point, for example, is insufficient to capture the full SO2 impacts from this major SO2 source. Additional monitoring locations should be based on the results of air dispersion modeling of the plants' SO2 emissions.

Response: MassDEP acknowledges Sierra Club's preference for modeling versus monitoring for determining compliance with the 1-hour SO2 NAAQS. At this time, MassDEP is awaiting final guidance from EPA on what modeling and monitoring will be required. In June 2010, EPA adopted a new SO_2 standard of 75 parts per billion (ppb) measured hourly. EPA indicated in its designation guidance that, in addition to monitoring, states must model the impacts of SO_2 emissions from sources that have the potential to cause or contribute to a violation of the standard to support a designation of "attainment." In June 2011, MassDEP recommended to EPA that Massachusetts be designated as "unclassifiable" under the SO2 NAAQS. This recommendation was based on the fact that the six existing Massachusetts SO2 monitors show concentrations below the SO2 NAAQS, but that stationary sources had not yet been modeled relative to the NAAQS so a recommendation of "attainment" could not yet be made. In September 2011, EPA issued draft guidance for modeling facilities for 1-hour SO2 NAAQS compliance. EPA anticipated finalizing the modeling guidance in mid-2012. However, in April 2012, EPA advised states that based on comments it received on the proposed guidance, it is reconsidering its approach, and initiated a stakeholder process to help it refine its approach for determining whether air quality in a given area meets the SO2 NAAQS, and what combination of monitoring and modeling would be appropriate. EPA has not yet issued final guidance, and in July 2012, EPA announced that it was delaying the deadline for designations under the SO2 standard by one year, until June 2013. Therefore, in the 2012 Network Plan, MassDEP is not proposing any changes to the existing SO2 monitoring network since EPA has not yet issued final guidance on what monitoring is appropriate under the 1-hour SO2 NAAQS. Once EPA issues final guidance, MassDEP will work with EPA to ensure its monitoring network meets EPA requirements, and will include any changes in the 2013 Network Plan.

Robert Ukeiley's Comments (on behalf of Sierra Club)

7. Comment: MassDEP does not state in its Network Plan how many SLAMS sites are required and how many SLAMS sites Massachusetts has, but merely lists its ozone monitors. When the listed ozone monitoring sites are connected to individual Core Based Statistical Areas, MassDEP lacks the required number of ozone SLAMS sites. In particular, the Providence-New Bedford-Fall River area does not have the required two monitors. EPA AirData lists only the Fairhaven site, which MassDEP temporarily closed in April 2012 due to school reconstruction but plans to have a new site in Fairhaven by 2013. In the meantime, MassDEP has placed an ozone monitor in Fall River. MassDEP must establish two monitors in the area to meet the requirements of 40 CFR Part 58, Appendix D.

Response: Rhode Island operates an ozone monitor in East Providence, RI, which is within the Providence-New Bedford-Fall River area, which together with MassDEP's Fairhaven site meets the requirement for two ozone monitors. As noted in MassDEP's Network Plan, MassDEP had to temporarily close the Fairhaven monitor, but will establish a new ozone monitoring site in

Fairhaven by 2013. In addition, MassDEP has sited an ozone monitor in Fall River. Therefore, the requirement of having two ozone monitors for the Providence-New Bedford-Fall River area is being met with the East Providence and Fall River monitors, and will be exceeded when a site in Fairhaven is re-established.

8. Comment: It is unclear whether Massachusetts has the proper number of monitors in Worcester. Worcester may meet requirement for two monitors. One monitor in this area, Worcester Airport (25-027-0015), is identified by both MassDEP and EPA. The second monitor, in Uxbridge, is unclear. MassDEP identifies an Uxbridge monitor with site ID 25-017-4003. EPA AirData lists a different Uxbridge monitor, with Site ID 25-027-0024. The Uxbridge site EPA lists is not located in Worcester County, which defines the border of the Worcester MSA. MassDEP gives no location for its site beyond "Uxbridge." MassDEP must demonstrate in its Plan that it has the required number of monitors in Worcester.

Response: MassDEP listed an incorrect Site ID for the Uxbridge monitor in the draft Network Plan. In the final Plan MassDEP has listed the correct Site ID as 25-027-0024, which matches the ID for the Uxbridge monitor in EPA's AirData. MassDEP installed the Uxbridge ozone monitor in 2008 at the request of EPA to ensure that the Worcester CBSA has two appropriately sited ozone sites. The Worcester Airport site and the Uxbridge site are both located in the Worcester CBSA and fulfill the requirements of two ozone monitors in that area.

9. Comment: MassDEP's 2012 Plan does not indicate which monitors are required ozone SLAMS monitors, nor whether those monitors are operated during the entire ozone monitoring season. Massachusetts' ozone monitoring season is from April to September. Required ozone SLAMS sites must be operated during the entire ozone season, and any deviation from this requirement must be approved by the EPA Regional Administrator and documented within the annual monitoring network plan. It is unclear whether MassDEP operates required ozone SLAMS monitors during the ozone season. EPA AirData indicates that Massachusetts requires 183 days of monitoring—exactly the number of days from April 1 to September 30, inclusive. This means that anything short of 100% data completeness results in a violation of 40 CFR Part 58, Appendix D. EPA AirData does not show a single monitor in Massachusetts with 183 valid days of monitoring for each of the years 2009-2011. This means that MassDEP impermissibly deviates from the required ozone monitoring season. Any deviations from the ozone monitoring schedule must be approved by the EPA Regional Administrator. MassDEP has not demonstrated in its 2012 Plan that it has approval for this deviation from the ozone monitoring season.

Response: MassDEP does operate all of its ozone monitors for the entire ozone season. EPA requires that ozone monitors achieve at least 90% data capture. All of MassDEP's year-round ozone monitors exceed 90% data capture, except in certain circumstances (see response to Comment 10 below). While the ozone monitoring season consists of 183 days, no monitor's operating hours will total to exactly 183 days due to the need to calibrate the monitors in the field (so that totals will be 180 to 182 days).

10. Comment: EPA AirData for the period of 2009-2011 indicates that some ozone monitoring sites in Massachusetts did not meet the data completeness requirements of 40 CFR Part 50,

Appendix P. According to EPA AirData, the following sites had individual years with less than 75% data completeness:

Year	Core Based Statistical Area (CBSA)	Site ID	Percent Days
2011	Pittsfield, MA	250034002	74
2009	n/a	250070001	69
2009	Boston-Cambridge-Quincy, MA-NH	250094004	41
2011	Boston-Cambridge-Quincy, MA-NH	250094004	46

Furthermore, the Boston-Cambridge-Quincy, MA-NH site, ID 25-009-4004, did not meet the 90% average data completeness requirement for the three-year period 2009-2011: the site had only 62% data completeness for that period. Therefore, Massachusetts has not met the data completeness requirements of 40 CFR Part 50, Appendix P.

Response: MassDEP routinely meets EPA's data completeness requirements for its monitoring sites, with rare exception. There are some circumstances that are beyond MassDEP's control that can affect data completeness. Regarding the specific sites noted in commenter's table, the Pittsfield site is actually the Adams site (25-023-4002) on the summit of Mt Greylock, and MassDEP cannot always access that site at the start of the ozone season due to summit weather conditions. As noted in the Network Plan MassDEP plans to move the site to a lower elevation site that can better characterize population exposures to ozone concentrations in Berkshire County, which we believe will address data capture issues. For the Wampanoag Tribal Site (250070001) on Martha's Vineyard, MassDEP does not operate this site, although MassDEP assists the Tribe when its ozone monitor needs repair and also provides quality assurance assistance. Regarding the former Newbury site (250094004), in June 2009 MassDEP had to shut down the site due to construction, resulting in the 41% data capture that year. MassDEP moved the monitor to Newburyport and started monitoring at the new location in July 2010 after the start of the ozone season, resulting in the 46% data capture for 2010 (not 2011, which is an error in the commenter's table). MassDEP made EPA aware of each of these circumstances. In 2011, MassDEP achieved a 98% data capture at the Newburyport site.